

Atty Dkt. No.: 10992125-2
USSN: 10/036,999

REMARKS

Claim 7 has been amended to clarify that the calibrating step (a) is performed prior to prior to scanning an interrogating light across an array package. Support for this amendment may be found, e.g., at page 12, lines 4-5 and Fig. 6.

No new matter has been added. Accordingly, the Applicants respectfully request the entry of the amendments herein.

Claims 12-17 are cancelled. The cancellation of these claims is made without prejudice to renewal, without intent to acquiesce to any rejection, and without intent to surrender any subject matter encompassed by the canceled claims. The Applicants expressly reserve the right to pursue any canceled subject matter in one or more continuation and/or divisional applications.

Claims 1-5, 7-11 and 18-20 are pending after entry of the amendments herein.

REJECTION UNDER 35 U.S.C. §103

Claims 1-11 and 18-20 are rejected under 35 U.S.C. 103(a) as unpatentable over Bengtsson (US 6,078,390) in view of Rava et al. (US 5,874,219).

Independent Claim 1 specifies a method that includes decreasing power of the interrogating light for a first site on the array package during scanning wherein the first site is outside an area occupied by the array. In other words, the method specifies a site that is not an area occupied by the array.

In support of this rejection, the Examiner refers to col. 6, lines 23-25 of Bengtsson and argues that the cited passage describes a calibration area that is distinct from the micro-array and thus is an area outside an area occupied by the array. However, the cited passage referred to by the Examiner in fact specifically describes that the calibration area is an area occupied by the array. This passage clearly describes that the calibration area "may be the entire micro-array" (col. 6, line 24-25). This entire array calibration area is clearly an area occupied by the array. The passage continues that the calibration area may instead be "some portion of the array" (col. 6, line 25). Likewise, this array portion calibration area is an area occupied by the array, as it is in fact a portion of the array. By definition, if the calibration is some portion of the array, it must be an area occupied by the array. Accordingly, for at least this reason, Bengtsson does not teach or suggest a method that includes decreasing power of the interrogating light for a first site on the array package during scanning wherein the first site is outside an area occupied by the array, as the passage cited by the Examiner in support of this rejection clearly describes a calibration area that is within or includes an area occupied by the array.

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As Rava et al. fail to make-up for the deficiencies of Bengtsson, Claim 1 is patentable over Bengtsson in view of Rava et al.

Independent Claim 5 specifies a method in which the interrogating light power is altered based on the signal emitted from the first site, when the interrogating light initially illuminates the first site. In other words, Claim 5 specifies that, during an initial light interrogation of a first site, the interrogating light power is altered based on the signal emitted from the first site. It is the altering which occurs when the interrogating light initially contacts the feature. Such altering allows power to be corrected before the interrogating light contacts the remainder of the feature so that useful data can still be obtained from that feature.

In support of this rejection, the Examiner relies on col. 8, lines 11-24 of Bengtsson which the Examiner argues teaches the power is turned off during scanning and hence as light initially illuminates the site. However, Bengtsson does not teach or suggest that the power is turned off based on the signal emitted from the first site, as claimed in Claim 5. The turning off is merely dictated by the width of the elements over which the light is scanned. Bengtsson teaches "that the system need not have determined the locations of the individual elements in the micro-array, as long as the width, or diameters, of the elements are known. The system then turns the lasers 12 and 14 off for times that translate to a fraction of the width of each of the elements." (col. 8, lines 18-24) Accordingly, it is clear that the passage cited by the Examiner does not teach or suggest that the power is turned off based on the signal emitted from the first site as Bengtsson clearly describes that the power is turned off based on the width dimension of a scanned element.

As Rava et al. fail to make-up for the deficiencies of Bengtsson, Claim 5 is patentable over Bengtsson in view of Rava et al.

Independent Claim 7, and Claims 8-11, specify a method in which a step, prior to a scanning step (b), includes calibrating an interrogating light power versus a control signal characteristic, from a light system which provides the interrogating light of a power which varies in response to the control signal characteristic. As noted, it is after this calibration step that a scanning of interrogating light step (b) is performed. Claim 7 has been amended to further clarify that the calibration is performed prior to scanning the interrogating light across the array package.

In support of this rejection, the Examiner relies on Bengtsson at col. 2, lines 22-39 at which the Examiner asserts that Bengtsson teaches calibrating by comparing detected signals to a maximum data signal value wherein following the comparison, the power of the illuminating light is altered. However, the passage merely describes, prior to a scan, setting an initial setting of the detector gain to maximum and the excitation signal power to a predetermined default value, which description

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does not describe calibrating an interrogating light power versus a control signal characteristic, from a light system which provides the interrogating light of a power which varies in response to the control signal characteristic as claimed in the subject claims as this setting is merely based on a predetermined default value. Scanning is then performed and laser excitation signal power is adjusted by a predetermined factor. Accordingly, Bengtsson described adjusting laser power after a scanning step, not before as claimed in the subject claims.

As Rava et al. fail to make-up for the deficiencies of Bengtsson, Claim 7 is patentable over Bengtsson in view of Rava et al.

Claim 18, and Claims 2-4 and 19-20 that depend therefrom, specify altering power of the interrogating light for a first site based on location of the first site or on a determination that the emitted signal from the first site will be outside a predetermined intensity range absent the altering, wherein the interrogating light power is altered during a row scan of the interrogating light. Accordingly, these claims specify that interrogating light power for a first site is altered during a row scan and is based on (1) location of the first site, or (2) on a determination that the emitted signal from the first site will be outside a predetermined intensity range absent the altering.

In support of this rejection, the Examiner refers to Bengtsson at col. 8, lines 11-23. This passage teaches that the power is turned off during some fraction of the time the system is scanning across the scan line. However, this passage specifically teaches that any turning off of the lasers is not based on the locations of the individual elements of the micro-array ("the system need not have determined the locations of the individual elements in the micro-array, as long as the width, or diameters, of the elements are known"). While Bengtsson further describes the attenuation based on the M brightest acquired pixels, this is not performed during a row scan as specified in the subject claims, as Bengtsson teaches that a determination of saturation is based on a scan line and thus such a determination and subsequent attenuation can only be performed after a line has been scanned. Accordingly, it is clear that the passage cited by the Examiner does not teach or suggest that the power is turned off based on either (1) location of the first site, or (2) on a determination that the emitted signal from the first site will be outside a predetermined intensity range absent the altering, wherein the power is turned off during a row scan of the interrogating light.

As Rava et al. fail to make-up for the deficiencies of Bengtsson, Claim 18, and Claims 2-4 and 19-20 that depend therefrom, are patentable over Bengtsson in view of Rava et al.

For at least the reasons described above, the subject claims are patentable over Bengtsson in view of Rava et al. As such, the Applicants respectfully request that this rejection be withdrawn.

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CONCLUSION

In view of the remarks, this application is considered to be in good and proper form for allowance and the Examiner is respectfully requested to pass this application to issue.

The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1078, reference no. 10992125-2.

Respectfully submitted,

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